

## THE DIGITAL CONSERVATION AND REVITALIZATION OF REGIONAL LANGUAGES IN NUSANTARA

Munawwir Hadiwijaya<sup>1)</sup>, Kingkin Puput Kinanti<sup>2)</sup>, Ike Dian Puspita Sari<sup>3)</sup>  
<sup>1) 2) 3)</sup> IKIP Budi Utomo

### SUBMISSION TRACK

Submitted : 21 August 2022  
Accepted : 20 September 2022  
Published : 18 October 2022

### KEYWORDS

Digital Conservation,  
revitalization, Indonesia  
regional languages

### CORRESPONDENCE

E-mail: Mr.awinwijaya@gmail.com

### A B S T R A C T

The purpose of this research is the digitization of regional languages of Indonesia. The form of technology that was developed is a digital conservation and revitalization program. The development model that will be used in this program is the modified Borg and Gall development research model. There are six aspects that are assessed, namely aspects of linguistic, aspects of aesthetic appeal, features of media relevance, aspects of content arrangement, aspects of software engineering, aspects of effects on learning techniques. After using the app for roughly a month, students gave it an average rating of 4.72, and professionals gave it a rating of 4.52 using a grade range of 1 to 5.

### Introduction

Modernity has brought regional languages to the brink of extinction. As a cultural product, the high and low vitality of a language is very dependent on its users. Low vitality can lead to extinction, and vice versa. A language has high vitality if the process of cultural transmission between generations can be preserved (Fishman 1991). In addition, a language can be threatened with extinction if its users no longer respect their own language, or they do not perceive it as a language that can unite communities and are ashamed or unwilling to care about the correct use of the language. The latest data shows that there are around 640 regional languages in Indonesia. 154 languages require special attention, of which about 139 languages are endangered, and 15 languages are declared extinct (Wurm, 2001).

On the other hand, modernity as a product of rational activity (Rappa and Wee, 2006), cannot be separated from the achievement of certain goals of the state, through its policies, to regulate its society. Around the 70s, many factors inside and outside Indonesia had a major influence on various aspects of Indonesian people's lives: politics, culture, economy, and even ideology. The newly formed regime, the new order regime, 'opened' Indonesia's door to welcome what is called modernity. The New Order tried hard to strengthen its position by legalizing new policies both domestically and internationally (Suwardono, 2016). In the cultural aspect, this regime uses language as the main means to introduce its new ideology, to manipulate and control discourse. Fully aware that language is a very powerful and strategic tool to shape and manipulate discourse to build hegemony, they force what is called language politics to achieve this goal. The government established a bureau called the Center for Language Formation and Development in 1974. Through this bureau the position of Indonesian has become stronger than before (Widjojo and Noorsalim, 2004). Indonesian is designed in such a way that its position is stronger and even dominant in the context of the corpus, status, and usage in society (Suharyo, 2018). As the national language, Indonesian is used in every aspect of people's lives, such as science and technology, the political system

(constitutional government), legal institutions, educational structures, language standardization, and mass consumption patterns.

In addition to Indonesian, foreign languages, especially English according to Alwasilah (1997) are a strong obstacle and potential to "threat" the position and role of vernacular language. The number of phenomena of language mixing and translation in various social, economic, and even social activities in society is one of the pieces of evidence of the "threat" of foreign languages to vernacular languages. There has been a shift in the understanding of the Indonesian people about the concept of language prestige. There is an unwritten agreement about the stratification of the language they use, the highest being foreign, the second level being Indonesian, and vernacular as the lowest level.

On the other hand, the implementation of the mandate of the 1945 Constitution of Article 32 paragraph 2 regarding the maintenance of regional languages is considered not optimal, the lack of local language learning resources that can be accessed by the community is one of the main causes. The Indonesian government, through the Language Agency with five main programs for the protection of language and literature, has worked very hard to suppress the rate of extinction of regional languages in Indonesia. One of the obstacles faced by the language agency is the limited number of human resources. This has an impact on the lack of technological innovation in the field of language. On the other hand, the portion of learning regional languages in a formal environment is very limited, because breakthroughs in technological innovation are needed that can be used as learning resources outside of school and are able to bridge the results of studies that have been held by researchers with the community. Digital technology engineering will greatly contribute to regional language conservation efforts.

There are two main obstacles in efforts to preserve regional languages, first, technological innovation in the field of language which is still limited. There are many concepts about efforts to preserve regional languages by using the technology offered, but in their implementation, they are still very rarely found. Among the few implementations of technological innovations in the field of language, especially regional languages, is the development of interactive multimedia mobile learning based on Android-based Javanese script (Rahardjo & Degeng, 2016). The use of technology in the linguistic field is more directed at foreign languages, such as English, Arabic, Mandarin, etc. (Azhari, 2019; Widyatmojo & Muhtadi, 2017). Even if many language applications are found, most of them are only limited to documentation, not yet touching on revitalization efforts.

Second, the lack of technological innovation in languages that can be accessed by the wider community of course has the impact of a lack of local language learning resources. UNESCO (2003) has provided nine indicators of language vitality, two of which are 1) language and literacy education materials which refer to written materials available and children can learn them at school, and 2) the amount and quality of documentation which means that there is a good grammar. adequate or adequate grammar, dictionaries, and texts, but no everyday media; Audio and video recordings may be available in various qualities or levels of explanation. The lack of learning resources can be one of the causes of the delay in the process of intergenerational language transmission which of course can be one of the causes of language extinction. Therefore, a comprehensive and holistic effort is needed in the conservation of regional languages in the archipelago which reaches 640 regional languages, 154 languages require special

attention, of which about 139 languages are endangered, and 15 languages are declared extinct (Wurm, 2001).

The purpose of this research is the digitization of regional languages of Indonesia. The form of technology that will be developed is a digital conservation and revitalization program. There are 2 stages in this program: 1) the development stage, namely the development of language learning applications. Inspired by the Duolingo application, the application for learning international languages, the application is the local version by prioritizing the values of local wisdom of the local language being studied. The basic concept of this application is to document regional languages by teaching them. This application is designed to be accessible to anyone who wants to know or learn a certain regional language through a smartphone. The features in this application product focus on four language skills with tiered levels, each of which is presented in different themes. There will be several choices of regional languages that can be learned, the final target of developing this application is to document all regional languages of the archipelago. As an initial project, this program will digitize two regional languages in East Java, namely Javanese and Madurese. 2) socialization, education, and promotion that will be carried out in several forms of activities targeting all communities at all levels. On campus, the target is to form a community that cares about the preservation of regional languages among academics; Among students to grow the importance of preserving regional languages and make applications that will be developed as a reference to support the teaching of regional languages in schools; and society.

The program developed is expected to be able to make a real contribution to the conservation of regional languages in Indonesia which can later become a reference in both formal and informal environments so that the rate of extinction of regional languages can be stopped. The availability of interesting learning resources that can be accessed by anyone is a very strong form of conservation, because the local language is not only documented but also that people can easily learn it anywhere and anytime. This application will also be very useful for speakers from other cultural tribes who want to learn the language of certain communities in Indonesia. Supported by good education and outreach programs, public awareness of the importance of preserving local languages can be grown. This is in line with what was revealed by Obiero (2010) that education in language is very important for the vitality of language. Strong oral traditions are still upheld by some language communities, and some do not want their languages to be recorded. Language proficiency is a source of pride in other groups. However, in general, social and economic progress are closely tied to literacy levels. All ages and linguistic proficiency levels must have access to books and materials on all subjects.

### **Research Method**

The development model that will be used in this program is the modified Borg and Gall development research model. After conducting the initial needs analysis, the next stage is the development stage.

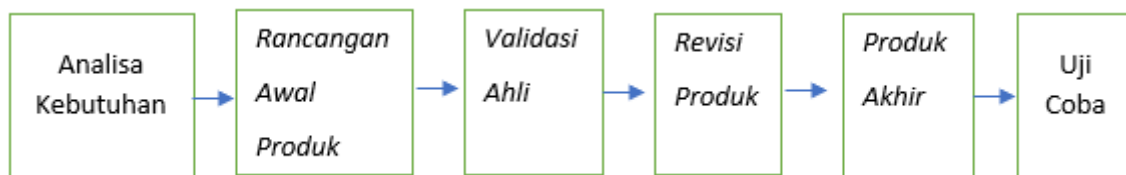
To find out the immediate needs of potential users, the distribution of several questionnaires to students from various levels, students and the public will be carried out online. In addition, interviews were conducted with several sources from potential users both online and offline. The results of the questionnaires and interviews will be used to formulate application models and materials to be developed.

The product model will be agreed upon between the proposer and the partner by referring to the results of the needs analysis that has been carried out. This stage is the

stage of making a blueprint of the developed application which is the basis for the development of the next stage. The result of this stage is the initial product of the application.

The next stage after the initial product is finished is expert validation. There are two main elements of the product to be validated, namely content/material and media. Validators in the form of experts in Javanese and Madurese validate the material in the application, accuracy in the four language skills, listening, speaking, reading, and writing will be the focus. In addition to the language aspect, the material organization aspect, the effect aspect for learning strategies, and the evaluation aspect are also the focus of validation. IT experts act as media validators, several aspects that will be validated include aspects of visual appearance, aspects of media relevance, and aspects of software engineering.

The results of product validation will be used as a reference in improving the products developed. Major or minor revisions will depend on the results of product validation. The final product of this development is an Android-based application. Products that have been validated will be tested on a small scale directly to potential users, in this case students from various levels of education, students and the community. After the trial phase, users will be asked to give their assessment of the product. The instruments used in this assessment process are in the form of questionnaires and interviews.



**Figure 1.** R&D Flowchart

## Result and Discussion

### Product Development

The basic concept of NY is to document the local language of Nusantara by teaching it, where this concept will be translated in the form of interactive local language learning. NY was inspired by an android application “Duolingo”, a popular language learning application about several languages in the world. The features and how this application works will be a bit similar to “Duolingo”, the difference is, in NY there is one feature that explains the cultural context of the language learned through card images. This application is designed to run on smartphones, therefore the main software used in the development process is Android Studio.

The application development that is being carried out is still around 25% of the work and has not included material on Javanese and Madurese languages, which will later be provided by partners in the form of a data corpus.

The following is an initial design of the features that are being developed in the "Nusantara in Your Hand" (NY) application:

1. Login Page
2. User data. Choice of language to be studied
3. The level of difficulty, the selected language exercises are thematic from basic to expert.



Figure 2. Initial Appearance of the “Nusantara in Your Hand” (NY) Application

#### 4. Variation of practice item models

- Tap the couple. The user is required to correctly pair up a series of words in two languages (the original and the one he is learning).
- Transliterate spoken words. The learner listens to words and phrases in the target language. The identical description of the image's essence is provided beneath the image. The assignment is to compile the proposed terms' translations (by dragging them).
- Decide on a picture. The user is presented with a number of visuals and brief descriptions in the language he is learning.
- From a variety of text alternatives, pick the appropriate translation. This is a sample lesson for anyone interested in launching a language learning app startup that is both straightforward and effective.
- How would you put it? The user must construct certain phrases using the suggested words.
- Choose the omitted word. The learner recognizes the term in the language. He had to make a guess as to which term was the right one.
- Record and translate. Access to a microphone is necessary for this really intriguing experiment. Users are required to read phrases in

their native tongue and then translate them aloud. Of course, pronunciation is crucial in this situation.

- Ask. Any highlighted word can be clicked on by the user to view its instructions, including translations and use cases.



Figure 3. Variation of Exercise Item Model

## 5. Achievements

Each completed theme, the user will get 1 card (picture card according to the cultural context of the language being studied).

## 6. Community

Users can join the community according to the language they are interested in, where they can interact directly.

## 7. Profile page and settings

Here the user can view and edit the personal data that has been entered and monitor his progress in training.



Figure 4. “Nusantara in Your Hand” (NY): Achievements, Menu, and Community

## **Discussion**

In this study, researchers carried out stages, namely collecting data using a questionnaire (Questionnaire).

Seven factors—visual appearance, media relevance, material structure, software engineering, effects on learning techniques, language, and evaluation—become factors in the evaluation of both experts and users (Hadiwijaya et.al., 2019).

## **Visual Display Aspect**

The visual display aspect refers to how something appears to the eye. Physical characteristics of objects include size, texture, shape, and visual characteristics are typically the most important in this situation. Caivano (2015). Applications for Advanced Languages are created utilizing the Flutter Framework and React Native, the appearance is a bit monotonous because it does not have a choice of templates. However, the results of media expert validation and questionnaires and interviews conducted on users, exceeded what was expected.

## **Media Relevance Aspect**

It's important to use media sensibly when learning. Media can be employed to stimulate conversation or clarify an idea. The learning materials are delivered by Proficient in Language using a variety of media. 1) To help visitors grasp the content being discussed, videos, specifically chosen videos from open-source websites like YouTube, metube, etc., that are pertinent to the topic at hand, are used; The application also incorporates: 1) Sketches, cartoons, and other pertinent visuals; 2) Images; and 3) Audio, which is mostly used in listening sessions.

## **Aspects of Organizing Materials**

A systematic method of storing and retrieving materials is referred to as the material organizing aspect. The particular arrangement depends on the environment and layout of the classroom as well as the personalities and preferences of the teachers and students using that space. In order to give students and teachers easy access to the appropriate material with the fewest possible learning interruptions, materials are organized. The Proficiency Language Application's presentation of information about learning Indonesian is what this, to put it simply, refers to.

This program has eight built-in subjects, all of which are fundamental learning tools for people who are just starting to learn Indonesian. Introductions, Numbers and Time, Money, Food, Place and Direction, Family, Hobbies and Work, and Home and Environment are just a few of the themes that have been assembled based on needs analysis, interviews, and references pertinent to learning Indonesian for beginners.

Listening, speaking, reading, and writing are the four language skills that are used to group each topic. A menu of exercises is available in addition to the course materials to help international students improve the knowledge and abilities they have learned from the earlier menu.

## **Software Engineering Aspect**

The process of evaluating user requirements and creating, constructing, and testing end-user applications that would satiate these demands using software programming languages is referred to as the element of software engineering. It is the software development process that incorporates engineering ideas. Software engineering

is utilized for larger and more complicated software systems, which are employed as important systems for corporations and organizations, as opposed to simple programming (Hardesty, 2010).

In contrast to other similar Android builders, the application is dynamic since it is made using open-source software called Framework Flutter Framework and React Native. This is because the web is the basis for its design. It makes use of a graphical user interface (GUI) that is remarkably reminiscent of the StarLogo TNG user interface and the Scratch programming language, allowing users to drag and drop visual items to construct programs that can run on desktops and mobile devices.

### **Aspects of Effects for Learning Strategies**

The way in which users learn is referred to as the learning strategy's effect. A learning method is a unique way for a person to carry out a task. In more detail, learning strategies are the methods in which people arrange and employ a certain set of skills to learn material or carry out other tasks more quickly and effectively in academic and non-academic settings (Schumaker & Deshler, 1992).

Once more, the goal of Proficiency in Regional Languages is to combine classes into a single, anytime-accessible program that would provide users with a unique environment for studying Indonesian regional languages, particularly Javanese and Madurese. This application helps them get around their limited learning time.

### **Aspects of Language (Linguistics)**

Form, content, and use are the three basic facets of linguistics, according to Newmonic (2016). Form: consists of the linguistic building blocks of morphology (grammar), syntax (sentence structure), and phonological awareness (sound awareness). Content: consists of elements like semantics, vocabulary, and word and general knowledge. Practical application area. Specifically, this refers to social language comprehension and use. This includes knowing how to speak appropriately in social and communicative settings and comprehending social norms.

The information utilized in this program was gathered from numerous sources, including books, professionals, and personal experiences. Before the application was constructed, the results of the users' needs analysis were used to choose and compile the content. When trying to preserve regional languages, users encounter three basic issues: Users require more media in the learning process for three reasons: 1) they lose interest in the material since the teacher uses a rather dull teaching method; 2) they don't have enough time to study regional languages because they can only learn for 100 minutes a week in class; and 3).

### **Aspects of Evaluation / Practice Questions**

Evaluation is the methodical appraisal of a subject's value, suitability, and relevance using standards-based criteria. This program uses numerous practice questions that display or can be chosen after users have finished the topic matter to assess their comprehension. To prevent test monotony, many question types are utilized, such as multiple choice, WH questions, matching, drawing conclusions, etc. After the final question has been answered in each practice session, a scoring system is displayed. Since the users vanished as soon as the question was answered, they were unable to go back to the prior item. This is helpful for keeping people in a "fair" mindset and gauging their



actual comprehension. By adopting this type of evaluation methodology, users are encouraged to get ready to actively communicate in a learnt regional language.

### 1) Material Expert Validation

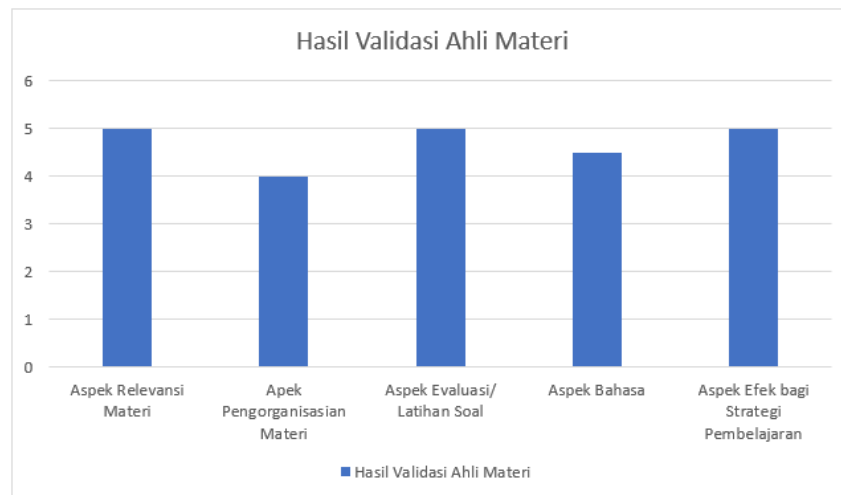


Figure 5. Bar chart of Material Expert Validation results

According to Figure 5, the Language Proficiency Application learning media receives an average rating of 4.55 and a percentage value of 90.91%, which puts it in the Very Appropriate category for usage as an interactive learning multimedia.

### 2) Media Expert Validation

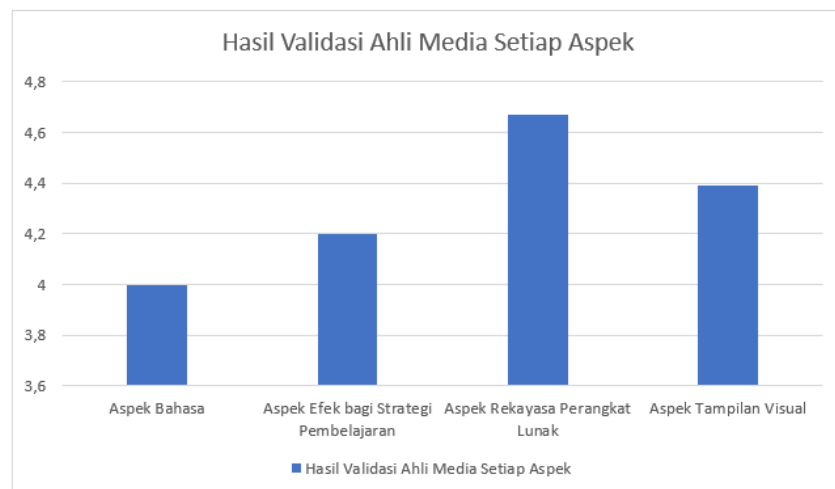
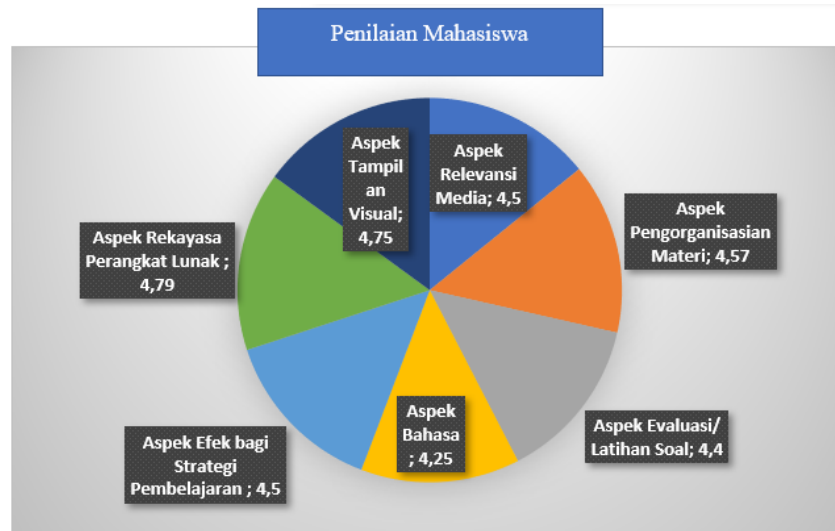


Figure 6. Bar chart of Media Expert Validation results

According to Figure 6, the Language Proficiency Application learning media receives an average rating of 4.31 and an accuracy rate of 86.25%, which puts it in the Very Appropriate category for usage as an interactive learning multimedia.

### 3) Users Assessment



**Figure 7.** Diagram of Student Assessment Results

According to Figure 7, the users' average score for the Language Proficiency Application media is  $(X) = 4.03$ , which according to the assessment ranges table is between 3.41 and 4.20 and can be classified as Eligible. The calculation results also show that from the material's quality aspect and its use based on aspects of material relevance, pneumatic learning media have been created and are acceptable for use as interactive learning multimedia by users in terms of material structure, evaluation/practice questions, language, impacts for learning methodologies, software engineering, and visual appearance.

### Conclusion

For people interested in studying Indonesian regional languages, particularly Javanese and Madurese, Proficient in Language is a suitable alternate learning medium. This application is categorized as appropriate for use after a tryout and evaluations to users, university students, school students, and society members in general, conducted by two learning media experts. Six factors, including features of aesthetic appeal, aspects of media relevance, aspects of material structure, aspects of software engineering, aspects of effects on learning techniques, and aspects of language, are evaluated. After using the app for roughly a month, consumers gave it an average rating of 4.72, and experts gave it a rating of 4.52 on a scale of 1 to 5.

### References

- Alwasilah, C. (1997). *Politik Bahasa dan Pendidikan*. Bandung: Remaja Rosdakarya.
- Azhari, A. (2019). Inovasi Media Pembelajaran Bahasa Arab Berbasis E-Learning. *CIRCUIT: Jurnal Ilmiah Pendidikan Teknik Elektro*, 3(1), 40-47.
- Caivano, J.S. (2015). Appearance. *Encyclopedia of Color Science and Technology*. New York: Springer Science+Business Media.
- Fishman, J. A. (1991). *The Sociology of Language*. Massachusetts: Newbury House Publication.
- Hardesty, L. (2010). The MIT roots of Google's new software. MIT News Office.

- Hadiwijaya, M., Widiyanah, I., & Amalyasari, M. R. (2019). The development of English for Transportation (EnTra) Application for Students in Training and Education Program for Human Resource Development on Transportation Agency. *Jurnal ilmiah bahasa dan sastra*, 6(1), 38–50.  
<https://doi.org/10.21067/jibs.v5i1.3601>
- Newmonic. D. (2016). What is language?. [online], <http://www.speechlanguage-resources.com/What-is-language.html>, accessed on 02 September 2019.
- Obiero, O.J. (2010). From Assessing Language Endangerment or Vitality to Creating and Evaluating Language Revitalization Programmes. *Nordic Journal of African Studies*, 19(4), 201–226.
- Rahardjo, T. & INS Degeng. (2019). Pengembangan Multimedia Interaktif Mobile Learning Berbasis Anrdroid Aksara Jawa Kelas X Smk Negeri 5 Malang. *Jurnal Kajian Teknologi*, 2(3), 195-202.
- Rappa, A.L. & Wee, L. (2006). *Language Policy and Modernity in Southeast Asia*. New York: Springer.
- Schumaker, J. B., & Deshler, D. D. (1992). Validation of learning strategy interventions for students with LD: Results of a programmatic research effort. In Y. L. Wong (Ed.), *Contemporary intervention research in learning disabilities: An international perspective*. New York: Springer-Verlag.
- Suharyo. (2018). Nasib Bahasa Jawa dan Bahasa Indonesia dalam Pandangan dan Sikap Bahasa Generasi Muda Jawa. *NUSA*, 13 (2), 244-255.
- Suwardono. (2016). Bahasa Jawa: Dulu dan Sekarang. *Hasil Wawancara Pribadi: 9 Juni 2016*, Malang.
- UNESCO. (2003). *Language Vitality and Endangerment*. International Expert Meeting on UNESCO Programme Safeguarding of Endangered Languages.
- Widjojo, M.S. & Mashudi N. (2004). *Bahasa Negara Versus Bahasa Gerakan Mahasiswa*. Jakarta: LIPI Press.
- Widyatmojo, G& A. Muhtadi. (2017). Pengembangan multimedia pembelajaran interaktif berbentuk game untuk menstimulasi aspek kognitif dan bahasa. *Jurnal Inovasi Teknologi Pendidikan*, 4(1), 38-49.
- Wurm, S.A. (2001). *Atlas of the World's Languages in Danger of Disappearing*. UNESCO